

**PART I Authorization to Operate**

- A. The permittee is authorized to operate Class V Injection Wells, at the facility described in the permit application, the subsequent permit modification applications dated February 13, 2003 and September 18, 2006, in the reissue applications dated June 8, 2007 and July 16, 2012, and in the cover page of this permit, in accordance with the provisions set forth in this permit.
- B. This permit and the authorization to inject shall remain in effect until the expiration date stated on the cover page of this permit. If the permittee desires to continue injection past the expiration date of this permit, the permittee shall request a permit reissuance at least 180 days prior to expiration of this permit.

**PART II Construction Requirements****A. Injection Well Requirements**

1. The permittee may inject ammonium nitrate, carbonate buffer, diammonium phosphate, ethylenediaminetetraacetic acid (EDTA), ethanol, guar gum, hydrogen peroxide, iron powder, magnesium sulfate, methanol, molasses, potassium bromide, potassium hydroxide, potassium lactate, silica, sodium carboxymethylcellulose, sodium hydroxide, sodium lactate, sodium persulfate, sodium sulfate, urea, soy powder, vegetable oil, lecithin, ethoxylated sorbinatan monooleate, sodium benzoate, and bacteria as described in the original permit application and subsequent permit modification applications dated February 13, 2003 and September 18, 2006, in the reissue applications dated June 8, 2007, July 16 2012 and February 12, 2014 and in the cover page of this permit.
2. The permittee shall provide a means of sampling the injection fluid prior to injection, if the need arises.

**B. Modifications**

A permit modification shall be obtained prior to modification of any injection well or supporting surface. Modification shall mean any action that will change the configuration of the well beneath the surface, the methods of monitoring injection, or will result in injection of a fluid not specifically authorized by this permit.

**PART III Monitoring and Operating Requirements****A. Injection Fluid**

The permittee shall not inject any substance that is defined as hazardous or toxic by Federal or State laws or regulations or any substance not identified in the application for this permit. The injection of substances other than those identified in the permit application is prohibited.

**B. Monitoring Wells**

1. The permittee shall monitor and limit groundwater in accordance with Appendix A. The injection activity shall not result in exceedence of any established MCL in groundwater outside the areas of contamination.

2. The groundwater monitoring regime must be sufficient to detect any adverse affects to groundwater quality due to the injection activity. The Department may change the sampling requirements if the sampling data indicate a need to do so.
3. Monitoring wells shall be sampled for background water quality prior to injection.

C. Operation

The injection well(s) operated under this permit shall function properly and injection fluid shall not surface or saturate the uppermost soil layer. Should the injection well(s) fail to function properly, the permittee shall take corrective action, to include cessation of injection, as required by ADEM.

**PART IV Records, Reports, & Submittals**

A. Records

1. The permittee shall retain all records concerning the data used to complete the permit application, the operation of the wells, and the nature and composition of pollutants injected; to include records of the calibration of instruments, meters and gauges, quality control records, and recordings from continuous monitoring instrumentation; until at least three years after the closure of well(s).
2. When requested by ADEM, the permittee shall deliver copies of any of the records maintained in accordance with this permit.

B. Reports

1. The permittee shall submit to ADEM written confirmation of all injection of chemical oxidation solutions that occur, including the initial injection. The written confirmation shall be submitted no later than thirty (30) days after the chemical oxidation solution is injected and shall include the information listed below:
  - a) The date of the injection.
  - b) The amount of substance injected.
  - c) The location(s) of the injection.
2. The permittee shall report to ADEM any of the following:
  - a) Any planned action which will change the use of the injection wells, will result in injection of a fluid different from that authorized by this permit, will change the method of operations of any injection well, or will change the method of the monitoring of well operations or injected fluids.
  - b) Any planned transfer of ownership of all or part of the permitted facility.
  - c) Any relevant facts of which the permittee becomes aware which should have been submitted in a permit application and any corrections to data previously submitted in a permit application.

3. Other Submittals

Studies, engineering reports, plans and specifications, plugging and abandonment plans, logging reports, and other technical documents submitted to comply with this permit shall be prepared by or under the supervision of qualified persons defined by the UIC Regulations of the ADEM.

4. **Within 180 days upon the effective date of this permit, the permittee must enroll and participate in the Department's web-based electronic environmental (E2) DMR reporting system.** Once the permittee is enrolled in the E2 DMR system, the permittee must utilize the system for the submittal of DMRs. The Permittee Participation Package may be downloaded online at <https://e2.adem.alabama.gov/npdes>. If the E2 DMR system is down due to technical problems originating with the Department's system, the permittee is not relieved of the obligation to submit DMR data by the required submittal date via faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date.

**PART V Plugging and Abandonment**

- A. The permittee shall perform any abandonment and closure actions that may be required by ADEM to remove a threat to groundwater quality or to the health of persons which is caused by the injection activity.
- B. Upon the end of use for each injection well, the permittee shall plug and abandon each well in a manner which protects each USDW from pollution by surface water and which prevents the movement of any pollutant or formation fluid from one USDW to another or from one formation to another and which isolates the injection zone

**PART VI Permit Modification, Revocation, Suspension, and Termination**

- A. ADEM may impose emergency additional conditions to this permit when necessary to protect waters of the state from pollution. These conditions may include suspension of the permit to inject and shall remain in effect until the permit is modified, revoked, suspended or terminated in accordance with the UIC Regulations of the ADEM.
- B. Non-emergency permit modification, revocation, suspension, and termination actions shall be accomplished in accordance with ADEM Administrative Code Rule 335-6-8.

**PART VII General Provisions**

- A. The permittee shall comply with all provisions of the UIC Regulations of the ADEM and shall comply with all provisions of this permit and shall reduce or halt injection if needed to maintain compliance with the permit and regulations.
- B. The permittee shall comply with all applicable Federal and State hazardous waste management regulations.
- C. The permittee shall allow members of the ADEM staff to:
1. Access property and records of the permittee for purposes of inspection.
  2. Collect samples of the injected fluids, process and wastewater streams associated with the permitted injection wells.

3. Collect samples from any monitoring wells.
  4. Obtain copies of records upon request.
- D. The permittee shall immediately take all reasonable steps to minimize or correct any adverse environmental impact resulting from the operation of the permitted injection wells.
  - E. This permit does not convey any property rights of any sort, or any exclusive privilege.
  - F. The filing of a request by the permittee for a permit modification, revocation, and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
  - G. Any noncompliance with this permit constitutes a violation of the Alabama Water Pollution Control Act and/or the Underground Injection Control Regulations and is grounds for enforcement action such as permit termination, revocation, modification; or denial of a permit renewal application.
  - H. Injection into waters of the state, which in this case is groundwater, in accordance with this permit shall not result in the exceedance of any primary or secondary Maximum Contaminant Level (MCL) in groundwater as established by the Environmental Protection Agency. Injection into groundwater, in accordance with this permit shall not result in a violation of a surface water quality standard.
  - I. All provisions of ADEM Admin. Code Rule 335-6-8-.12 are incorporated as terms and conditions of this permit by reference

## APPENDIX A

Groundwater monitoring wells in area 1 (W-13D, W-16, W-19, W-30) and area 2 (W-22, W-24, W-31D, W-56) shall be sampled quarterly as specified below, dependent on area of injection.

<u>EFFLUENT CHARACTERISTIC</u>	<u>UNITS</u>	<u>DISCHARGE LIMITS</u>	<u>MONITORING REQUIREMENTS</u>	
			FREQUENCY	SAMPLE TYPE
Iron	mg/L	Report	Quarterly	Grab
Nitrate	mg/L	10	Quarterly	Grab
Sulfate	mg/L	Report	Quarterly	Grab

## ADEM Permit Rationale

Date: June 13, 2019

Prepared by: Jessica Spence

Permittee Name: Ford Motor Company  
c/o Andrew S. Hobbs  
290 Town Center Drive, Suite 800  
Dearborn, MI 48126

Facility Name: Former Ford Facility- Sheffield Aluminum Casting Plant

Location: 2019 Ford Road  
Muscle Shoals, Colbert County, Alabama  
Lat: N 34.765742/W -87.601782  
Town 3S, Range 10 W, Section 29

UIC Permit Number ALSI9917631

Draft Permit is: Reissuance due to expiration

Injection Description: Injectants now include ammonium nitrate, carbonate buffer, diammonium phosphate, ethylenediaminetetraacetic acid (EDTA), ethanol, guar gum, hydrogen peroxide, iron powder, magnesium sulfate, methanol, molasses, potassium bromide, potassium hydroxide, potassium lactate, silica, sodium carboxymethylcellulose, sodium hydroxide, sodium lactate, sodium persulfate, sodium sulfate, urea, soy powder, vegetable oil, lecithin, ethoxylated sorbinatan monooleate, sodium benzoate, and bacteria.

Discussion: Standard permit drafted.

1. No hazardous injection
2. Sampling point required

